

Listing of Claims

1. (Currently Amended) A method comprising:
storing service limit information for one or more locations in a mobile network;
comparing a location of a radio device to the stored information; and
limiting at least one service to the radio device based on a result of the comparison,
wherein the service limit information is stored in a network circuit based on preferences of a
user of the radio device and designates at least one location preselected by the user within which
said at least one service is to be limited.
2. (Original) The method of claim 1, wherein the radio device is a mobile station.
3. (Original) The method of claim 1, wherein said at least one service comprises at least one
of:
a circuit originating call;
a circuit terminating call;
originating short message service;
terminating short message service;
additional service;
roaming service;
a packet originating call; and
a packet terminating call.

4. (Previously Presented) The method of claim 1, wherein the network circuit includes a mobile communication exchange.
5. (Original) The method of claim 4, wherein the mobile communication exchange comprises at least one of a packet exchange and a circuit exchange.
6. (Original) The method of claim 5, wherein:
the packet exchange comprises a serving GPRS support node; and
the circuit exchange comprises a mobile switching center and a visitor location register.
7. (Original) The method of claim 4, wherein:
the mobile communication exchange is coupled to a home location register;
the mobile communication exchange is coupled to a universal terrestrial radio network;
and
the mobile communication exchange is coupled to one of a public switched telephone network and an Internet protocol network.
8. (Original) The method of claim 7, wherein the mobile communication exchange is coupled to the Internet protocol network through a gateway GPRS support node.

9. (Previously Presented) The method of claim 1, wherein said comparing includes:
comparing the location of the radio device with the stored information in a register of the network circuit, wherein the register comprises at least one predetermined relationship between the location of the radio device and a limitation on at least one service to the radio device.
10. (Original) The method of claim 9, wherein said limiting at least one service to a radio device according to the location of the radio device is in accordance with said at least one predetermined relationship comprised in the register.
11. (Original) The method of claim 9, wherein the register is a home location register.
12. (Original) The method of claim 1, wherein the location of the radio device is represented by at least one of:
a location area identifier;
a service area identifier; and
a routing area identifier.
13. (Original) The method of claim 12, wherein:
the location area identifier and the service area identifier are used for circuit service; and
the routing area identifier and the service area identifier are used for packet service.

14. (Original) The method of claim 1, wherein prior to said limiting at least one service to the radio device, comprising:

detecting a handover of the radio device to a new location; and
prior completing the handover to the new location, informing a user of the radio device that at least one service to the radio device will be limited once the handover is complete.

15. (Original) The method of claim 1, wherein said limiting is in accordance with a request from a user of the radio device to limit at least one service to the radio device according to the location of the radio device.

16. (Original) An apparatus configured to implement the method of claim 1.

17. (Currently Amended) An apparatus comprising:

a home location register storing information indicating predetermined relationships between limitations on subscriber services and locations of a mobile station; and

a circuit which limits a subscriber service to the mobile station according to the information stored in the home location register, said subscriber service limitations ~~being designated based on preferences of a user of the mobile station~~ designating at least one location preselected by a subscriber of the mobile station within which said service is to be limited.

18. (Currently Amended) A service control method using subscriber's location information for a mobile communication system, comprising:

registering information on a service limit according to a subscriber's location in a service profile of the subscriber during a service change or subscription; and

if a service request is received, limiting the service on the basis of the mobile terminal subscriber's location information using registered contents of the subscriber's service profile, wherein the service limit is based on preferences of a user of the mobile terminal and the registered contents designates at least one location preselected by the user within which the service is to be limited.

19. (Original) The service control method of claim 18, wherein the subscriber's location information for limiting the service is expressed by a location area identifier (LAI), a routing area identifier (RAI), and a service area identifier (SAI).

20. (Currently Amended) The service control method of claim 18, wherein ~~contents of the~~ limited service includes at least one of: a circuit originating call, a circuit terminating call, an originating SMS service, a terminating SMS service, an additional service, a roaming service, a packet originating call, and a packet terminating call.

21. (Previously Presented) The service control method of claim 18, further comprising:

if the mobile communication subscriber initially connects to a mobile communication network after the information on the service limit according to the subscriber's location is registered in the service profile of the subscriber, transmitting the subscriber profile including service limit contents from a home location register to a mobile communication exchange to store the subscriber profile.

22. (Previously Presented) The service control method of claim 18, further comprising, when the subscriber requests the service:

transmitting service contents and the location information to a mobile communication exchange;

comparing the transmitted service and a service request location with the service profile of the subscriber; and

if the service limit contents according to the service request area coincide with each other, informing the service limit contents to the mobile terminal subscriber, and rejecting the service.

23. (Currently Amended) The service control method of claim 18, further comprising, if a handover made by movement of the mobile terminal into a service limit area is produced while the subscriber is receiving the service, ~~the steps of:~~

sensing the handover;

- detecting a target location of the handover;
- checking whether the target location corresponds to the service limit location;
- if the target location corresponds to the service limit area, informing the service limit area; and
- if the handover is made into the service limit area, informing the area in which the service is limited, and releasing the service.

24. (Previously Presented) A service control method using subscriber's location information for a mobile communication system, comprising:

- registering information on a service limit according to a subscriber's location in a service profile of the subscriber during a service change or subscription; and

- if a service request is received, limiting the service on the basis of the mobile terminal subscriber's location information using registered contents of the subscriber's service profile, and wherein, if the subscriber requests a change of service limit contents according to the subscriber's location:

- receiving a request for the change of the service limit contents from the subscriber;
 - correcting the service profile of the subscriber according to contents of the request; and
 - requesting the change by transmitting the corrected profile to a mobile communication exchange.

25. (Previously Presented) A service control method using subscriber's location information for a mobile communication system provided with a mobile terminal, a home location register (HLR), and a mobile communication exchange, the method comprising:

registering a service limit according to the location information based on one or more preferences designated by the subscriber;

extracting a kind of a service requested during a service request and a location of a subscriber; and

limiting the service if a present location of the subscriber is included in a limited location of the extracted service, wherein the limited location is preselected by the subscriber.

26. (Currently Amended) The service control method of claim 25, wherein said registering includes:

storing contents of the service limit according to the location information in the HLR; and

if the subscriber's mobile terminal connects to a mobile communication network, the mobile communication exchange reading out a service limit profile according to the location information from the HLR, the service limit profile designating the limited location preselected by the subscriber.

27. (Currently Amended) The service control method of claim 25, wherein said extracting includes:

the mobile communication exchange receiving the service request from the mobile terminal; and

the mobile communication exchange extracting the subscriber-preselected location of the mobile terminal ~~that has~~ corresponding to the registered the service limit according to the kind of the received service and the location information.

28. (Previously Presented) The service control method of claim 25, wherein said limiting includes:

the mobile communication exchange judging whether there is a location limit in the extracted service, and if it is judged that there is no location limit in the extracted service, normally processing the requested service;

normally processing the requested service if there is the location limit in the extracted service, but the present location of the subscriber is not included in the limited location; and

reporting the service limit area and refusing the service if the present location of the subscriber is included in the limited location of the extracted service.

29. (Currently Amended) The service control method of claim 25, wherein the service limit is effected by registering ~~at least one~~ the limited location preselected by the subscriber using area

~~among~~ a location area identifier (LAI), a routing area identifier (RAI), and a service area identifier (SAI).

30. (Currently Amended) The service control method of claim 25, wherein ~~contents of the~~ limited service includes a circuit originating call, a circuit terminating call, an originating SMS service, a terminating SMS service, an additional service, a roaming service, a packet originating call, and a packet terminating call.

31. (Previously Presented) The service control method of claim 25, wherein, during said extracting, the mobile terminal requests a service request message including variables required for the service, the kind of the service, and the location information to the mobile communication exchange during the service request.

32. (Currently Amended) A service control method using subscriber's location information for a mobile communication system provided with a mobile terminal, a home location register (HLR), and a mobile communication exchange, the method comprising:

registering a service limit ~~according to the location information~~ based on one or more preferences designated by the subscriber;

detecting a handover target location of the subscriber who has registered the service limit according to the location information when the subscriber receives the service; and

releasing the service if a handover to the service limit area occurs, wherein said preferences designate at least one location preselected by the subscriber within which the service is to be limited

33. (Previously Presented) The service control method of claim 32, further comprising reporting in advance the subscriber of the service limit area if the target location moves to the service limit location before the third step.

34. (Previously Presented) The method of claim 1, wherein the stored information includes e-mail service limit information for at least one of a home of the user or a work place of the user.

35. (Previously Presented) The method of claim 1, wherein the stored information is in a subscriber service profile held in a home location register.

36. (Previously Presented) The method of claim 1, wherein the stored information limits a service requiring receipt of a call from a third party while the radio device is in said one or more locations.